I CLAIM:

1. Apparatus comprising:

a source of data corresponding to a video signal;

a detection system for generating a control signal from multi-bit auxiliary data embedded within the video signal, said auxiliary data being embedded within image data of said video signal and slightly changing values thereof, said embedded auxiliary data being substantially imperceptible to a human viewer of said video signal; and

means responsive to said control signal for inhibiting copying of said video signal.

2. A method of embedding multi-bit auxiliary data into an input motion picture signal that is thereafter compressed to yield a compressed signal, and thereafter discerning the multi-bit auxiliary data from a non-identical counterpart to said motion picture signal obtained by decompressing the compressed signal, the method comprising:

providing an input motion picture signal representing a plurality of frames of image data, each frame comprising a plurality of pixels, each pixel having a value associated therewith;

for each of a plurality of pixels in said frame, transforming the value thereof in accordance with at least some of said multi-bit auxiliary data, wherein an encoded frame of image data is produced having the auxiliary data embedded therein;

repeating the foregoing step for a plurality of different frames of said motion picture signal, thereby yielding a first encoded motion picture signal;

compressing the first encoded motion picture signal;

decompressing the compressed, first encoded motion picture signal to produce a second encoded motion picture signal, said second encoded motion picture signal being non-identical to the first encoded motion picture signal due to said compression/ decompression process; and

discerning the multi-bit auxiliary data from the second encoded motion picture signal without reference to the input motion picture signal.

3. The method of claim 2 in which the discerning step includes processing a plurality of frames of said second encoded motion picture signal to determine the auxiliary multi-bit data embedded therein, wherein greater or lesser confidence in the auxiliary multi-bit data discerned from said second encoded motion picture signal can be obtained by processing more or less frames, respectively.

4. The method of claim 3 which includes performing said processing by a hardware decoding circuit.

5. The method of claim 4 which includes disabling recording capability of an apparatus based on said discerned auxiliary multi-bit data.

6. The method of claim 4 which includes incrementing a program specific billing meter based on said discerned auxiliary multi-bit data.

7. The method of claim 2 which includes:

after the compressing step, storing said compressed, first encoded motion picture data on an optically encoded storage disk; and

prior to said decoding step, reading said compressed, first encoded motion picture data from said optically encoded storage disk.

8. The method of claim 2 which includes converting the second encoded motion picture data to analog form, and thereafter discerning the multi-bit auxiliary data therefrom.

9. The method of claim 8 which includes digitizing the analog form of the second encoded motion picture data to produce a digitized signal, and discerning the multi-bit auxiliary data from said digitized signal.

10. The method of claim 2 in which all of said steps occur in the spatial image domain, rather than some occuring in a transformed, frequency domain.

11. The method of claim 2 in which the transforming step includes also processing the value of said plurality of pixels in accordance with samples of a pseudo-random noise signal.

12. The method of claim 2 wherein a plurality of pixels in the first encoded motion picture signal are each encoded in accordance with more than one bit of said auxiliary data signal, wherein single pixels are each encoded in accordance with multiple bits.

13. The method of claim 2 wherein a plurality of pixels in the first encoded motion picture signal are each encoded in accordance with no more than one bit of said auxiliary data signal, wherein signal pixels are each encoded in accordance with single bits.

14. In a method of decoding an encoded video signal to extract a multi-bit auxiliary data signal therefrom, the encoded video signal representing a video sequence including a plurality of image frames, the multi-bit auxiliary data signal being steganographically encoded therein, the multi-bit auxiliary data signal thus being generally imperceptible to human viewers of the video sequence corresponding to said encoded video signal, said encoding taking the form of slight changes to portions of said video signal representing image information to thereby represent said multi-bit auxiliary data signal, an improvement comprising:

computing parameters related to the entropies of first and second signals, the first of said signals being an altered version of said encoded video signal; and

comparing said computed parameters to discern the value of at least one bit of said multi-bit auxiliary data signal.

15. The method of claim 14 in which the second of said signals is the encoded video signal.

16. In a method of decoding an encoded video signal to extract a multi-bit auxiliary data signal therefrom, the encoded video signal representing a video sequence including a plurality of image frames, the multi-bit auxiliary data signal being steganographically encoded therein, the multi-bit auxiliary data signal thus being generally imperceptible to human viewers of the video sequence corresponding to said encoded video signal, said encoding taking the form of slight changes to portions of said video signal representing image information to thereby represent said multi-bit auxiliary data signal, an improvement comprising processing encoded video signal corresponding to a plurality of image frames to extract said multi-bit auxiliary data signal therefrom, wherein greater or lesser confidence in the extracted multi-bit auxiliary data signal can be obtained by processing more or less frames of the encoded video signal, respectively.

17. The method of claim 16 in which said decoding includes statistically analyzing the encoded video signal to discern the auxiliary data signal encoded therein.

18. The method of claim 16 which further includes disabling recording capability of an associated apparatus based on said extracted auxiliary data signal.

19. The method of claim 16 which includes reading said encoded video signal from an optically encoded storage disk on which it was stored in lossy compressed form, and decompressing same prior to said decoding.

20. The method of claim 19 which includes reading said encoded video signal in MPEG-encoded form from said optically encoded storage disk, and converting said video signal to analog form prior to said decoding.

21. The method of claim 16 in which said decoding is accomplished in the spatial image domain.

22. In a method of decoding an encoded video signal to extract a multi-bit auxiliary data signal therefrom, the encoded video signal representing a video sequence including a plurality of image frames, the multi-bit auxiliary data signal being steganographically encoded therein, the multi-bit auxiliary data signal thus being generally imperceptible to human viewers of the video sequence corresponding to said encoded video signal, said encoding taking the form of slight changes to portions of said video signal representing image information to thereby represent said multi-bit auxiliary data signal, an improvement comprising computing a dot product between a representation of the encoded video signal and a reference signal, comparing the outcome of said dot product computation with a threshold, and discerning the value of at least a part of said multi-bit auxiliary data signal based on said comparison.

23. In a method of decoding an encoded video signal to extract a multi-bit auxiliary data signal therefrom, the encoded video signal representing a video sequence including a plurality of image frames, the multi-bit auxiliary data signal being steganographically encoded therein, the multi-bit auxiliary data signal thus being generally imperceptible to human viewers of the video sequence corresponding to said encoded video signal, said encoding taking the form of slight changes to portions of said video signal representing image information to thereby represent said multi-bit auxiliary data signal, an improvement comprising processing the encoded video signal with a pseudo-random key signal to de-randomize the multi-bit auxiliary data signal steganographically encoded therein.

24. The method of claim 23 which includes evalulating whether copying of the encoded video signal is permitted, based on the decoded auxiliary data signal.

25. In a method of decoding an encoded video signal to extract a multi-bit auxiliary data signal therefrom, the encoded video signal representing a video sequence including a plurality of image frames, the multi-bit auxiliary data signal being steganographically encoded therein, the multi-bit auxiliary data signal thus being generally imperceptible to human viewers of the video sequence corresponding to said encoded video signal, said encoding taking the form of slight changes to portions of said video signal representing image information to thereby represent said multi-bit auxiliary data signal, an improvement comprising applying the encoded video signal to a matched filter processing unit, applying a reference signal to said matched filter processing unit, and processing a plurality of frames of said encoded video signal with said processing unit to extract the multi-bit auxiliary data signal therefrom.